Infoterra’s TerraSAR-X Elevation product suite offers a 10m grid spacing and an absolute height accuracy of up to 5m, the TerraSAR-X Elevation DSM (digital surface model) is now operationally available for areas as small as only 500 sqkm, and up to full regional coverage, worldwide.

Particularly the reliability of the weather-independent radar sensor makes this an ideal complement to the established Spot Infoterra portfolio of elevation data sets such as Reference 3D, based on SPOT HRS optical data.

Users can adapt the scope of delivery to their individual requirements, as a set of auxiliary layers and the corresponding orthorectified image are optional additions to the TerraSAR-X ELEVATION DSM. As the propagation of the radar beam can be measured very precisely, with the satellite featuring a positional accuracy, the extracted height information is based on very solid input: TerraSAR-X StripMap stereo pairs, acquired in both ascending and descending orbit directions, are processed automatically, applying radargrammetry techniques. With algorithms specifically developed for this purpose, outliers, artefacts and gaps are identified and corrected. Water body features derived from corresponding TerraSAR-X image data are included and a subsequent manual editing of shorelines guarantees hydrological consistency.

This approach enables Infoterra to offer highly time-efficient production schemes. Full data acquisition and production for our minimum order unit of 500 sqkm can be carried out within about one month. For areas of about 500,000 sqkm, customers can expect the delivery within a year after ordering.

Precise elevation data is the initial foundation of any accurate geospatial product, particularly when the integration of multi-source imagery and data is performed based upon it. Topographic mapping, communications network planning, hydrologic modelling, air traffic security and, last but not least, the reliable orthorectification of high-resolution satellite imagery are only examples of the wide range of applications that benefit from precise, reliable elevation data.

Infoterra is thus working towards expanding the Spot Infoterra elevation data portfolio even further: today, radar-based Digital Terrain Models (DTM), a representation of the ground surface as so-called bare-earth terrain, are available tailor-made. An operational processing facility to generate standardised DTMs (TerraSAR-X Elevation DTM) is currently under development and expected to be implemented in 2010.

Lastly, the upcoming TanDEM-X mission, where TerraSAR-X and its "twin" TanDEM-X will be collecting interferometric data synchronously, has significant potentials in store. Together, the twin satellites will be collecting the data basis for a complete global elevation model, unprecedented in coverage and accuracy. TanDEM-X is scheduled to be launched on 21st June 2010; global elevation data products are expected to be available from 2013.